

5 receiving said path setup message over a first interface at a first router;
6 and
7 creating a first routing table entry for a first routing table, said first routing
8 table entry corresponding said destination node address to said first interface,
9 wherein a packet, subsequently received at said first router and having
10 said destination node address as a packet header destination address, is
11 forwarded from said first router over said first interface after said first router
12 associates said destination node address with said first routing table entry,
13 further comprising the step of:
14 maintaining said first routing table entry as a soft state in said first router,
15 said first routing table entry overwritten with a default entry if a refresh path setup
16 message is not received at said router within a specified period of time.

17
21. (New) The method of Claim 1, wherein said subnet is a single hop
wireless network.

REMARKS

Claims 1-20 are pending in the application.

Claims 1-6, 9 and 20 are rejected.

Claims 13-19 are allowed.

Claims 7-8 and 10-12 are objected to.

Claim 1, 7, 10 and 12 are amended.

Claim 4 is canceled.

Claim 21 is added.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

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Allowable Subject Matter

Claims 7-8 and 10-12 were indicated by the Examiner as including allowable subject matter. Applicants thank the Examiner for the indication of allowable subject matter which also includes Claims 13-19 (indicated as being allowed). Claims 7, 10 and 12 (which were objected to) have been rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Accordingly, each of Claims 7-8 and 10-12 is believed to be in allowable form.

Prior Art Rejections

Claims 4-6 and 20 were rejected under 35 USC §103 as being obvious in view of U.S. Patent No. 6,304,753 (Hartmaier) and further in view of U.S. Patent No. 5,533,026 (Ahmadi) - the cited prior art.

Applicants submit that the present invention as set forth in Claims 1 (now amended to incorporate the subject matter of Claim 4) and Claim 20, 7 and 13 is distinguishable over cited references, since all of the limitations of the claims are not found in the cited references. Additionally, applicants submit that one skilled in the art would not look to combine the cited references as suggested.

With specific regard to the Ahmadi reference, a significant difference is that the cited patent uses a "topology update mechanism of the network" (abstract) so that "location of the mobile unit at any time is made known to all routers of the network" (abstract). The present invention as claimed uses specialized path setup schemes to update only selective routers in the network. Thus, the Ahmadi reference, either alone or in combination with the other cited references, fails to teach or suggest the use of specialized path setup schemes for handoff situations as claimed.

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This crucial difference has very important consequences in terms of scalability and handoff quality. First, the Ahmadi reference imposes undue burden on ALL routers to know ALL the mobile host's location. The present invention uses a default route when it does not receive path setup messages - see claim 21 for example. Second, it can be seen that the topology update mechanism of the network of Ahmadi is not tuned for a time-critical function such as a handoff. In the present invention, path setup messages are designed just for handoff. Thus, the delay in re-establishing connectivity in the cited patent, especially for interactive and multimedia applications, can be quite high depending on the way the topology update mechanism operates and this could lead to the mobile host being disconnected for long periods of time. In the present invention as claimed, the path setup message travels from second to first base station and quickly re-establishes connectivity. Accordingly, based on the above remarks, applicants submit that one skilled in the art would not look to combine the Ahmadi reference with the other cited references in the manner suggested by the Examiner. Moreover, as pointed out, the combination of references fails to meet all the limitations of the claims as currently set forth.

Based on the above remarks and the amendments to the claims, applicants submit that the claims have been shown to be allowable in view of the prior art and that the basis for any rejections has been overcome.

Conclusion

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, it is respectfully requested that the Examiner contact the applicants' attorney at

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(732) 949-9742, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Please address all written correspondence to:

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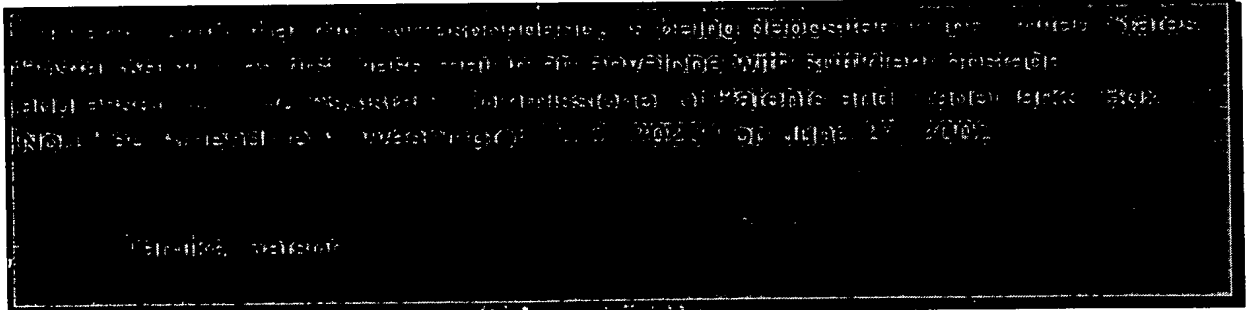
If any additional fees are due with respect to this amendment, please charge them to Deposit Account No. 12-2325

Respectfully submitted,



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Dated: June 27, 2002





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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

- 1 1. (Amended) A method of establishing a routing path for
2 packet delivery to a destination node within [a] the same packet-based subnet,
3 said destination node having a destination node address, said method
4 comprising the steps of:
5 launching a path setup message from said destination node;
6 receiving said path setup message over a first interface at a first router;
7 and
8 creating a first routing table entry for a first routing table, said first routing
9 table entry corresponding said destination node address to said first interface,
10 wherein a packet, subsequently received at said first router and having
11 said destination node address as a packet header destination address, is
12 forwarded from said first router over said first interface after said first router
13 associates said destination node address with said first routing table entry, and
14 forwarding a handoff update path setup message from a second wireless
15 base station to a first wireless base station if said wireless device is handed off
16 from said first wireless base station to said second wireless base station, said
17 handoff update path setup message used to alter routing table entries for
18 selected routers of said subnet.
19 .

- 1 2. The method in accordance with claim 1 wherein said destination
2 node is a wireless device.

- 1 3. The method in accordance with claim 2 wherein said first router is
2 incorporated within a first wireless base station.

1 4. Cancelled.

1 5. The method in accordance with claim 4 wherein said plurality of
2 subnet routers include at least said first wireless base station and said second
3 wireless base station.

1 6. The method in accordance with claim 4 wherein said handoff
2 update path setup message is initiated from said wireless device.

1 7. (Amended) A method of establishing a routing path for packet
2 delivery to a destination node within a packet-based subnet, said destination
3 node having a destination node address, said method comprising the steps of:
4 launching a path setup message from said destination node;
5 receiving said path setup message over a first interface at a first router;
6 and
7 creating a first routing table entry for a first routing table, said first routing
8 table entry corresponding said destination node address to said first interface,
9 wherein a packet, subsequently received at said first router and having
10 said destination node address as a packet header destination address, is
11 forwarded from said first router over said first interface after said first router
12 associates said destination node address with said first routing table entry,
13 said destination node being a wireless device and said first router being
14 incorporated within a first wireless base station,

1 [The method in accordance with claim 3] wherein said wireless device is able to
2 simultaneously tune to, and receive packets from, greater than one base station.

1 8. The method in accordance with claim 7 wherein said wireless
2 device is a CDMA device.

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1 9. The method in accordance with claim 1 wherein said packet-based
2 subnet is an Internet Protocol subnet.

1 10. (Amended) A method of establishing a routing path for packet
2 delivery to a destination node within a packet-based subnet, said destination
3 node having a destination node address, said method comprising the steps of:
4 launching a path setup message from said destination node;
5 receiving said path setup message over a first interface at a first router;
6 and
7 creating a first routing table entry for a first routing table, said first routing
8 table entry corresponding said destination node address to said first interface,
9 wherein a packet, subsequently received at said first router and having
10 said destination node address as a packet header destination address, is
11 forwarded from said first router over said first interface after said first router
12 associates said destination node address with said first routing table entry,
13 [The method in accordance with claim 1] further comprising the steps of:
14 forwarding said path setup message to a next router, said next router
15 receiving said path setup message over a first interface at said next router;
16 creating a next routing table entry for a next routing table, said next
17 routing table entry corresponding said destination node address to said first
18 interface at said next router; and
19 sending a path setup message acknowledgment to said destination node
20 address if said next router is a subnet root router.

1 11. The method in accordance with claim 10 further comprising the
2 step of:
3 repeating said steps of forwarding and creating a next routing table entry if
4 said next router is not said subnet root router.

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1 12. (Amended) A method of establishing a routing path for packet
2 delivery to a destination node within a packet-based subnet, said destination
3 node having a destination node address, said method comprising the steps of:
4 launching a path setup message from said destination node;
5 receiving said path setup message over a first interface at a first router;
6 and
7 creating a first routing table entry for a first routing table, said first routing
8 table entry corresponding said destination node address to said first interface,
9 wherein a packet, subsequently received at said first router and having
10 said destination node address as a packet header destination address, is
11 forwarded from said first router over said first interface after said first router
12 associates said destination node address with said first routing table entry,
13 [The method in accordance with claim 1] further comprising the step of:
14 maintaining said first routing table entry as a soft state in said first router,
15 said first routing table entry overwritten with a default entry if a refresh path setup
16 message is not received at said router within a specified period of time.

1 13. A packet router having a routing table adapted to maintain a
2 plurality of routing table entries, said packet router comprising:
3 means for receiving a path setup message over a first interface, said path
4 setup message including a field defining a destination address;
5 means, responsive to receiving said destination address, for generating a
6 routing table entry corresponding packets arriving at said packet router and
7 having said destination address as a packet header destination address to said
8 first interface;
9 means for receiving at least one packet having said destination address
10 as said packet header destination address;

11 means for performing a lookup of said routing table entry having said
12 destination address and as said packet header destination address from said
13 plurality of routing table entries;

14 means, responsive to said lookup, for forwarding said at least one packet
15 over said first interface.

1 14. The packet router in accordance with claim 13 wherein said
2 destination address corresponds to a wireless device.

1 15. The packet router in accordance with claim 13 wherein said router
2 is incorporated in a wireless base station.

1 16. The packet router in accordance with claim 13 wherein said packet
2 router is an Internet Protocol router.

1 17. The packet router in accordance with claim 13 wherein said path
2 setup message is a power up path setup message.

1 18. The packet router in accordance with claim 13 wherein said path
2 setup message is a handoff path setup message.

1 19. The packet router in accordance with claim 13 wherein said path
2 setup message is a refresh path setup message.

1 20. A method of updating host-based routing table entries for a plurality
2 of routers within a subnet when a mobile device is handed off from a first
3 wireless base station to a second wireless base station, said subnet providing

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4 wireless access for said mobile device to a packet-based network, said method
5 comprising the steps of:

6 creating a handoff path setup message at said mobile device;

7 routing said handoff path setup message to said first wireless base
8 station;

9 relating, as a routing table entry, an address for said mobile device with
10 an interface over which said handoff path setup message is received at said first
11 wireless base station and each intermediate router and base station through
12 which said handoff path setup message is routed; and

13 utilizing said routing table entry to forward a packet having said address
14 for said mobile device as a packet header destination address over said interface
15 over which said handoff path setup message is received.

16
1 21. (New) The method of Claim 1, wherein said subnet is a single hop
2 wireless network.